



CONVERSATION RECORD

04/26/2017

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU Virginia Electric and Power Company (Dominion)		DATE OF CONTACT 04/06/2017	TYPE OF CONVERSATION <input type="checkbox"/> E-MAIL <input checked="" type="checkbox"/> TELEPHONE <input type="checkbox"/> INCOMING <input checked="" type="checkbox"/> OUTGOING
E-MAIL ADDRESS		TELEPHONE NUMBER	

ORGANIZATION Virginia Electric and Power Company (Dominion)	DOCKET NUMBER(S) 72-16
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LICENSE NUMBER(S) SNM-2507	CONTROL NUMBER(S) L25121
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SUBJECT
Discuss information submitted by Virginia Electric and Power Company (Dominion) on February 28, 2017, regarding North Anna Power Station (NAPS) Independent Spent Fuel Storage Installation (ISFSI) license renewal application.

SUMMARY
 Dominion attendees: Diane Aitken, Tony Banks, Jim Williams, Brian Wakeman, Alan Ford
 TN Americas attendees: Jason Mantzouranis, Karan Muskar, Bill Casino, Jun Li, Rick Migliore, and David Lee
 NRC attendees: Kristina Banovac, Zhian Li
 A teleconference was held between NRC, Dominion, and TN Americas representatives to discuss Dominion's February 28, 2017, submittal of additional information on the NAPS ISFSI license renewal application (ML17065A248).
 The purpose of the call was to clarify information in the February 28, 2017, submittal.
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ACTION REQUIRED (IF ANY)
 There were no actions identified during the call. The NRC will consider the clarifications provided during the call as it continues its review of the NAPS ISFSI renewal application.
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NAME OF PERSON DOCUMENTING CONVERSATION
 Kristina Banovac

SIGNATURE

CONVERSATION RECORD (continued)

SUMMARY: (Continued from page 1)

NRC staff asked about the flux-to-dose-rate conversion factors used in the output files from calculation PA-0181, Rev. 0. It appeared that the conversion factors used are based on the ANSI/ANS-6.1.1-1991 standard. However, the 1991 version of this standard was withdrawn. The NRC currently accepts the conversion factors from the 1977 version of the standard in ANSI/ANS-6.1.1-1977.

Dominion noted that it intended to use the conversion factors from the 1977 version of the standard, but the notes in the output files mention the 1991 version. Dominion noted that if the 1991 conversion factors were indeed used, it would have a limited impact on the gamma dose rates in the calculation, and it would underestimate the neutron dose rates by 10-30%. Dominion noted that the neutron dose is less of a contribution to the total dose than the gamma dose. They also noted that actual measured dose (based on measured dose via thermoluminescent dosimeters (TLDs) along the ISFSI fence) is only on the order of 10-20% of the calculated dose in the analysis.

NRC staff asked about the neutron fluence calculation in AREVA calculation 503065-0500, Rev. 0 and whether the neutron source was based on a single fuel assembly or 32 fuel assemblies that can be stored in the TN-32 system. TN Americas mentioned that the model includes the total source of 32 fuel assemblies. ORIGEN is used to calculate the total source term. The total gamma and total neutron source term is reported in Table 11-9. From the total gamma and neutron source term, they calculate the neutron flux in the center, and they assume that the neutron flux is constant over 100 years to calculate the neutron fluence in Table 11-15. They use the MCNP model to calculate the total energy deposited rate inside the neutron shield, which is reported in Table 11-17; this value is used as the input into the AREVA 503065-0501, Rev. 0, calculation.

NRC staff also asked about the neutron flux of 6.38 MeV that was referenced in AREVA calculation 503065-0500, Rev. 0 and whether this was a cutoff for the neutron energies considered in the calculation. TN Americas noted that the calculated neutron flux includes the full energy spectrum. Dominion noted that it asked TN Americas to report the neutron energies above 6.38 MeV to assure that the TLDs they were using would be able to adequately detect/measure the neutron dose at the ISFSI. Dominion also noted that this is mentioned in the footnote in Table A-5 of the NAPS ISFSI license renewal application.

NRC asked about the response to RAI 3-4 and the comparison of the boron depletion in the basket compared to the neutron shield. Dominion clarified that the analysis of boron depletion in the basket does assume thermal neutrons and that the flux is constant over 1000 years. Dominion noted that because of this conservatism, the analysis can be used for comparison to boron depletion in the neutron shields. This analysis is discussed in the TN-32 Final Safety Analysis Report, Rev. 0, page 6.3-2.